

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1). (original) A machine for continuous-cycle shearing of moving welded tubes, comprising:

a conveyor system for continuously supplying a tube at a constant velocity and in a longitudinal direction of the tube;

a cutting slide which bears shearing devices predisposed to section the tube transversally and in successive tracts thereof;

means for activating which impose a linear alternating motion on the cutting slide without pausing, between an initial position and a final position along a parallel direction with respect to the longitudinal direction of transport of the tube;

the linear alternating motion comprises an outward run, from the initial position to the final position, at least a tract of which occurs in synchrony with an advancement of the tube and during which the tube is sectioned, and a return run, following which the cutting slide is brought back into the initial position;

both the outward run and the return run comprise an acceleration tract, a constant velocity tract and a deceleration tract;

wherein the means for activating impose on the cutting slide an alternating linear motion with no pauses following a law of motion in which acceleration is a derivable function.

2). (original) The machine of claim 1, wherein the law of motion imposed on the cutting slide, the derived acceleration function progresses continuously over time.

3). (original) The machine of claim 1, wherein the law of motion imposed on the cutting slide includes a velocity profile in which passages from the acceleration tract to the constant-velocity tract and passages from the constant-velocity tract to the deceleration tract occur with sinusoidal curves of connection.

4). (original) The machine of claim 1, wherein the law of motion imposed on the cutting slide includes a velocity profile in which passages from the acceleration tract to the constant-velocity tract and passages from the constant-velocity tract to the deceleration tract occur in seventh-degree polynomial curves of connection.

5. (new) A machine for continuous-cycle shearing of moving welded tubes, comprising:

a conveyor system for continuously supplying a tube at a constant velocity and in a longitudinal direction of the tube;

shearing devices (3) arranged for transversally sectioning the tube 10 into successive tracts of tube;

a cutting slide (2) supporting the shearing devices;

a cutting slide controller (4) configured to move the slide in a linear direction parallel to the longitudinal motion direction of the tube,

the cutting slide motion controlled to be continuous between a slide initial position and a slide final position with a cutting slide cycle comprising

i) an outward run, from the initial position to the final position with a synchrony tract of outward run in speed synchrony with the tube advancement speed, during the synchrony tract the tube is sectioned, and

ii) a return run where the cutting slide is brought back into the initial position, wherein,

both the outward run and the return run comprise an acceleration tract, a constant-velocity tract, and a deceleration tract, and

the cutting slide controller controls the cutting slide motion with an alternating linear motion that switches between the outward run and the return run free of pauses where the acceleration has a continuously changing value.

6. (new) The machine of claim 5, wherein,

the cutting cycle is controlled to begin from the initial position of the cutting slide and to accelerate the cutting slide until the cutting slide reaches the tube advancement speed so that the cutting slide is in speed synchrony with the tube and effectively moving at the same speed as the tube,

with the cutting slide in speed synchrony with the tube, the shearing devices begin and complete the transversal cut of the tube,

upon completing the cut of the tube, the cutting slide is controlled to slow down and change direction to begin the return run with the acceleration continuously changing as the velocity of the cutting slide passing through zero.